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ABSTRACT

This paper opens with a story of what was once cutting-edge, state-of-the-art technology and its integration into preservice teacher preparation. It is a story of the technology, in this case video recording, the theories applied to its educational use, and a specific teacher training method--microteaching. The historical context of microteaching with video recording feedback is presented. The further evolution of this technology in self-reflective methods is explored by considering the combination of inner development of the individual teacher with the outer, critical examination of social contexts of teaching. The final part of the paper constructs a critical framework for utilizing both inner, self-reflective models of video feedback with models of critical video ethnography, used in overseas educational development work in Africa, that examine situational practice. The paper explores the theory foundation of these models in search of common principles to inform the practical use of video in new models of critical inquiry and reflection in professional development. (Contains 17 references.) (Author/MES)

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Technology for Critical Pedagogy: Beyond Self-Reflection with Video

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Abstract: This paper*[i] opens with a story of what was once cutting-edge, state-of-the-art technology and its integration into preservice teacher preparation. It is a story of the technology, in this case video recording, the theories applied to its educational use and a specific teacher training method – microteaching. The historical context of microteaching with video recording feedback is presented. The further evolution of this technology in self-reflective methods is explored by considering the combination of inner development of the individual teacher with the outer, critical examination of social contexts of teaching. The final part of the paper attempts to construct a critical framework for utilizing both inner, self-reflective models of video feedback with models of critical video ethnography, used by the author in overseas educational development work in Africa, that examine situational practice. This paper will explore the theory foundation of these models in search of common principles to inform the practical use of video in new models of critical inquiry and reflection in professional development.

Once upon a time in teacher education...

In the mid 1960s a group of pioneering teacher educators at Stanford University in Palo Alto California began an experimental use of a new technology, video tape recording. At roughly the same time, among the ferment of ideas contributing to many facets of academe, processes of group interaction and the boundaries of individual growth and human potential were being explored. How do people effectively communicate in groups? How do individuals relate to one another in group settings to accomplish group oriented tasks? The fields of social and humanistic psychology were at this time generating relatively new ideas related to everyday activity in the workplace. Therapy groups, transactional analysis, creative problem solving (i.e. Synectics, see Gordon, 1971) and social learning theory formed a conceptual environment which some would use to apply to the process of teacher training. While various approaches situated in humanism contributed ideas about the development of the individual, other approaches to increasing the threshold of human behavioral efficiency also influenced inquiry directed towards learning and knowledge transfer. Sub-fields such as cybernetics and computing technology were beginning to influence practice through research into learning, cognition, training and the use of technology, largely from an efficiency model (how to increase learning with the least possible input of resources in the least amount of time). Research supporting these latter models were often funded by the US government through Department of Defense related contracts in search of more efficient training systems.

It was in this context that teacher educators would develop a process called microteaching, predicated on a few specific concepts. First, teaching behavior, and all complex behaviors for that matter, can be identified as a stream of activity which can be further atomized into discrete "micro" behaviors and that, once identified, can be studied, modified, practiced and learned (Acheson, 1964). Second, a powerful force in changing one's behavior is an external application of feedback, through peer interaction and internalized through personal, self-critique. A necessary set of pre-conditions is assumed to exist in that one has to be willing to accept the input of feedback towards the process of self-improvement and development. A central psychological concept, self-confrontation, is applied to this process of teacher training in small groups through peer feedback and self-analysis.

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Self-confrontation then, just as now, is a process where individuals are exposed to information about how others see them in an "external" view. Theoretical antecedents are positive and negative feedback, feed-forward models, and behavior modification. In these models, one's own behavior or actions are re-introduced through some form of "feedback" (in this case, through videotape and verbal feedback in peer-critique). The very nature of such feedback is necessarily taken in "critically" by the individual and assumed to influence desired changes in behavior based on suggested or modeled practice (Nielson, 1963). As a general practice of professional development, however, such methods are highly limited to the individual (and often emotionally coupled to his or her own personality and ego development) and to the immediate context of the environmental variables present at the time of observation or recording. Social contexts and their influence on behavior are intentionally minimized as variables affecting the subject or simply not dealt with. In traditional models of microteaching this often has meant using other students in the class as "surrogate" pupils when modeling practice lessons. Microteaching then and now, attempts to develop improvement in discrete teaching behaviors by a process of focussed observation, feedback and modification of isolated teaching behaviors. Thus the process of teaching and learning, through these various influences, became "technologized." In the 1980's, teacher "training" gave way to teacher "preparation" with associated models built on reflective practice and constructivist educational theories.

Video in a Reflective Practice World

Certainly linked to Dewey's notion of critical reflection informing practice and following the influence that Donald Scöhn's work has had on the profession, it can be said that we in the field of teacher preparation live, to varying degrees, in a "reflective practice world" (Scöhn, 1983). The "reflective practitioner" is a stated goal of many teacher preparation programs and appears in the discourse on nationally proposed standards (Chiarelott and Klien, 1996). Given the different theoretical underpinnings of current approaches to teacher development (holistic, authentic and socially constructed) one may ask "does microteaching have a place in a reflective practice world?" Microteaching, as a specific method of teacher "training", is also still used in teacher education programs although to what extent is difficult to document. Carlgren (1998) has pointed out a need to further explore both the theory and practice of "doing" reflective practice. Video technology is also described as a useful tool for self-reflection models in teacher development and assessment (Holodick, Scappaticci & Drazdowski, 1999).

Self-reflection is a proven way of extending the feedback models used in earlier approaches to professional skills development, including microteaching (Frieberg & Waxman, 1988). Here again the emphasis is on the "self" in relation to professional contexts involving negotiated behavior among colleagues, students, parents and the community. While the encouragement of self-reflective practice lead to better understanding of the self in these contexts, they do not necessarily help the individual form a critical approach to understanding those contexts. The result may be teachers who are competent and comfortable with their own growth and development, albeit in a relatively static reality that they are unprepared and unequipped to engage in proactive ways. The improvement of individual practice through self-reflection and self-assessment models is assumed to lead to the macro-improvement of social and institutional settings for education. This is to be accomplished (or so it is assumed) by raising the individual quality of instruction in the classroom as a unit of evaluation. Such approaches to quality improvement are dependent on quantity effects achieved through, among other things, coherence with national standards or criteria for professional growth and entry into the profession itself. Reflective practice as a goal of teacher development is echoed in the national standards (NCATE, 1997) for teacher education programs.

The uses of video in these models largely reflect the same framework for self-reflection as an extended form of peer-feedback. Video offers the reflective practitioner a tool to gather information about the self in authentic practical settings. Video technology is now used in a wide range of existing and emergent models of professional development, founded on theories of self-assessment and self-reflection with recording of practice for further analysis and reflection occurring in the field. Concurrent with the professional development models used is newly embraced constructivist theories of teaching and learning that are primarily represented by the work of Vygotsky (1978).

Through the looking glass: Beyond self-reflection as a professional development model

Critical self-assessment and self-reflection are powerful tools in the development of professional teachers who are committed to lifelong learning and continuous improvement of their skills. Self-reflection models and associated practices (reflective journals, reflective group discussion and feedback) are now very common in teacher preparation and development programs. Such models have followed holistic approaches that seek to overcome limitations inherent in technical skills related methods such as microteaching. The professional development of the "self" should always be part of programs that seek to foster improvement among those who desire to engage in a profession. There is a distinction, however, between process-oriented constructivist and social-constructivist paradigms which apply not just to professional development models but to the theories of classroom teaching which professional development models are aimed (Hung & Chen, 1999).

Amidst new reforms in education there are emergent models of professional development which focus not just on the individual in a type of setting (classroom teaching) but examine a more complex range of professional development characteristics across social and community boundaries. Schools, and the processes of teaching and learning, are only one part of this model. In these models, the individual is an actor in a rich and complex social and cultural milieu that forms the context of the professional development activity. A new paradigm for professional development includes a critical dialogue with a broad population of stakeholders such as parent groups, professionals from other fields (academic discipline experts from university settings), community organizations and local business and include learning theories with social and organizational dimensions in addition to theories which are largely concerned only with the individual. In particular, expectations for teacher educators will now focus on developing the ability to work with groups of teachers as organized professional units in the school. Associated skills would include group feedback and critique and the ability to continue their professional development through inquiry models in their own professional settings (Stein, Smith & Silver, 1999).

Such changes are a challenge for professional development programs which in the past typically attempted to impart the "pedagogy of teaching" as sets of technical skills in higher education settings. Video technology has been used in various forms throughout this evolution. Although it is far from a "neutral tool", neither is video deterministic in nature. Characteristics of video recording and data collection need careful analysis related to the intended field setting. Video recording (and the use of the resulting data) carries potential in a new paradigm of professional development. Its use in models of professional development that go beyond technical "micro" skills development or self reflective, personal assessment models will depend on being able to widen the "field of view" beyond the limitations of a single teacher standing in front of a classroom of learners and beyond the inner-reflective use of "video journals". Models of use that fit with inquiry-based approaches to "wide-field" analysis of social contexts already exist in ethnography and could provide powerful frameworks for the incorporation of video technology into new paradigms of professional development for teachers.

The brief foray into the historical context of one technology innovation in teacher training and its subsequent evolution as a tool for teacher development is simply pointed at the axiom: It is not so much what tools are available as what we do with them. If we desire new activity or constructions, based on new paradigms for teaching and learning, then we will use available tools, adapt them and re-shape them if they do not "fit" or create entirely new tools to accomplish the desired actions. In terms of preparing new teachers, there is now a mandate, reflected in the ISTE (1996) technology standards for teacher education to expose them to the possibilities which new information technologies seem to hold. We assume in the discourse on technologized education, that value and "power" are intrinsic in the mere access to information, not in the active use of information for processes of social justice, environmental preservation and economic equity. Active processes of learning require being able to use information in new ways, integrated with and built upon prior knowledge in the minds of the learner and framed by a critical analysis of the social construct in which the knowledge is formed and used. The use of this technology and all of the "new information technologies" which teachers have now or will have at their disposal will not amount to much unless they are grounded in a theory of application, itself part of a general theory of education.

As world problems mount, precisely at a time when information technology is creating shorter paths to wider communication and information exchange, the focus of education should rightfully be on

providing the information and skills necessary for present and future generations of learners to engage these problems and form solutions which are viable in a democratic and culturally diverse society. Critical pedagogy, which forms a theory-based practice of teaching and learning directed at the critical analysis and "discovery" of social and political inequity at the root of society ills, provides one theory-context for pursuing the "meaningful use" and integration of new information technologies into teaching and learning. In short, the past uses of technology (like video) in teacher development have been directed at improving the individual as an autonomous entity, capable of "improving" and modifying behavior towards an accepted or demonstrated ideal state. Reflective practice provides a rich extension of this mechanistic model to "skills development" but is still highly individualistic in nature. For models and theory that provide a greater sense of purpose and meaning for educational activity educators need to look farther afield. Arthur Pearl and Tony Knight (1999) have offered a convincing "general education theory" for democratic education, in which the use of technology, especially information technologies, would make sense. They posit four general requirements of a general democratic education theory:

1. Knowledge should be universally provided to enable all students to solve generally recognized social and personal problems.
2. Students should participate in decisions that affect their lives.
3. Clearly specified rights should be made universally available.
4. Equal encouragement should be given for success in all society's legal endeavors. (Pearl & Knight, 1999, p. 2)

Critical discussion of how the current push for technology integration into teacher education and teaching in general will benefit society as a whole is sorely missing from much of the discussion in the literature. Most accounts focus on the practical, myopic view of what works (within limited definitions of evaluation criteria) or simply examine what is possible through a limited demonstration of "cutting-edge" uses and re-configuration of existing technology. Pearl and Knight further elaborate a 9 point model for problem-solving curriculum directed at building competence for dealing with social and personal problems. These range from environmental issues to economic justice and inequality to workplace democracy and human rights, nonviolence, elimination of world poverty and, in discussing technology, challenge curriculum in a democratic education to

> [Marshal] technology for socially useful purposes. Technology has intended and unintended consequences. Most current presentations of a high technology future are dystopic. Students need to examine how technology can be organized to better serve humanity. Students need to distinguish myth from reality in the highly promoted "information society." They need to be given the opportunity to perform research that will enable them to distinguish information from disinformation. Students need to be able to weigh the difficult ethical issues related to the use of technology. (p.38-39).

Quite a departure from the current discourse on integration standards most frequently cited in technology in teacher education forums.

Towards a Model for Using Video in Self and Situational Critical Reflection on Practice

Given its historical role and limitations in earlier microteaching approaches as well as in more recent reflective practice models, can video still be considered a useful tool in alternative approaches to teacher development? Turning the camera around to explore the context and setting of the classroom is a daunting task. Videotaping practitioners *in situ* can reveal rich data for analysis both by the subject (the teacher engaged in teaching practice), by peers (degree program candidates and colleagues) and by other participants like students and community members with an interest in the process of education in specific settings (Karasati, 1997).

A further extension of this practice which incorporates a critical awareness of the classroom as a setting for social and cultural development would be to create video data which examines not just the individual as an "actor" in the setting but as a participant in the setting itself. In this model, ethnographic

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video methods can be used as a method of data gathering and analysis (McCurry, 1995). At least a few areas of activity associated with teacher development overlap with video ethnography and ethnographic field methods in general: authenticity (data collected in real settings), contextualization of experience (placing events and their analysis in the broad social and cultural context in which they occur), iterative processes of producing "meaning" (sharing observations to confirm or refute assumptions and ascribed meaning to actions) and the formation of an inquiry approach to practice that encourages teachers to actively pursue understanding the "field reality" of their own life and professional circumstances. Further thoughts on some of these areas in relation to the use of video technology are considered below.

Authenticity: Video recorded for the purposes of modeling behavior for any type of further analysis should be collected in real environments. Simulations have some utility but their unauthentic nature will always be a distraction.

Digital video data: Video data, whether originating in analog or digital formats, offers the possibility for inclusion in portfolio for assessment or to demonstrate performance. This is a particularly interesting area since little is available on protocols for collecting such data and using it for auto-analysis or as part of peer or colleague mediated assessment. Data needs to be gathered in authentic environments, edited into "exemplary moments" based on critical judgement about one's development and performance.

Shared communication of feedback: Traditional peer feedback models developed over three decades ago need to be revisited given a new purpose to self-reflective models of teacher development. Perhaps mentor or colleague support systems in the school environments could accommodate video data gathered at the learning site for purposes of improving practice. Interpersonal communication models still seem to be a valid form but are not made explicit in many programs.

Contextualization of the data: Focussing less on the individual's behavior in isolation and more on the observed practice in real settings.

Participatory video production for reflective practice and practitioner inquiry: Based on models developed in international development education, video production is a yet to be exploited potential tool for the development of practitioner knowledge with preservice teachers.

Conclusion

Video, as one technology with its own evolution and characteristics, has been used successfully in support of differing approaches to teacher training and development. It has supported the use of micro-behavioral training methods as a feedback tool and has been used in constructivist models as a presentation media and tool for knowledge construction. Underlying these uses are broad, and quite divergent, theories of teaching and learning to which the technology, as a fundamental telecommunications tool, has been adapted. The more important consideration of the specific characteristics of any technology should be with these prevailing theories and they way methods and media based on these models are supported by the current state of the technology itself. In this paper, I have attempted to derive a framework for using video to support a socially constructive teacher development model that further supports a theory of democratic education. Such a framework and model for teaching includes the necessary broadening of the "field of view" of video use beyond the individual behavior of the teacher as a subject towards the complex social and cultural environment in which the teacher practices the art of teaching. Such an approach engages the teacher as a critical inquirer not just of his or her own practice but of the entire process and context of education, in all its complex social and cultural dimensions. Implications for the use of technology in teacher professional development under this approach are substantial.

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